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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/035,865	12/26/2001	Edward Litwinski	38190.234775	4871
826	7590	01/05/2004	EXAMINER	
STONER, KILEY SHAWN				
ART UNIT		PAPER NUMBER		
1725				

DATE MAILED: 01/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

10/035,865

Examiner

Kiley Stoner

Applicant(s)

LITWINSKI, EDWARD

Art Unit

1725

ed

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 December 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 16-33 is/are allowed.
- 6) ☒ Claim(s) 1-6 and 9-12 is/are rejected.
- 7) ☒ Claim(s) 7-8 and 13-15 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Applicable Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 and 3 are rejected under 35 U.S.C. 102(e) as being anticipated by Thompson (6,554,175 B1). Thompson teaches electrically preheating the pin/shoulder of the friction stir welding tool to 800F and then friction stir welding together two workpieces (column 16, lines 32-55). This is the same process and heating temperature that the applicant uses to obtain a friction stir weld joint comprising a refined grain structure having substantially no residual strain so as to inhibit grain growth during post-weld heat treatments. Since Thompson is performing the same method as the applicant, it is inherent that the weldment of Thompson would have a refined grain structure having substantially no residual strain so as to inhibit grain growth during post-weld heat treatments. Thompson also teaches at least one of said first and second structural members is formed from materials selected from the group consisting of aluminum, aluminum alloys, titanium and titanium alloys (column 1, lines 14-17).

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 9 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Larsson (WO 98/51441).

Larsson also teaches a machine having a rotatable spindle; a friction stir welding tool in rotatable communication with said spindle; and at least one heater adapted to thermally communicate with said friction stir welding tool to thereby heat said tool (abstract; Figure 2; page 9). Since Larsson is electrically heating only the body and the pin of the friction stir welding apparatus the heater has to be electrically insulated from the at least one structural member. The electrical heater of Larsson would inherently transfer heat through conduction.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Thompson (6,554,175 B1) as applied to claim 1 above, and further in view of Waldron et

al. (6,168,067) IDS. Thompson does not teach that said first and second structural members comprise dissimilar materials.

Waldron et al. teaches said first and second structural members comprise dissimilar materials (column 11, lines 27-56). At the time of the invention it would have been obvious to one of ordinary skill in the art to combine the friction stir welding of dissimilar materials as taught by Waldron et al. with the friction stir welding method of Thompson in order to form a weldment of the desired materials.

Claims 4-6 and 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thompson (6,554,175 B1). The intended use of the instantly claimed apparatus is noted, however, the intended use does not patentably distinguish said claimed apparatus over the prior art.

Larsson teaches a friction stir welding tool in rotatable communication with the spindle; and at least one heater adapted to thermally communicate with said friction stir welding tool to thereby heat said tool (abstract; Figure 2; page 9). It is obvious to one of ordinary skill in the art that the heat carrying medium would have to be contained within the cavity (11), in order to heat the body and the pin through conduction. Because the heat carrying medium is within the cavity, it is obvious that the heat carrying medium would be most efficiently heated within the cavity. Resistance heating coils are electrically heated, so Larsson suggests using a resistance heating means to heat the tool.

Allowable Subject Matter

Claims 16-33 are allowed.

Claims 7-8 and 13-15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

Applicant's arguments with respect to claims 1-15 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

The prior art of record that is cited as of interest is presented on the form-892. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kiley Stoner whose telephone number is (571) 272-1183. The examiner can normally be reached on Monday-Thursday (7:30 a.m. to 6:00 p.m.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on Monday-Friday. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Kiley Stoner A.U. 1725
Kiley Stoner 12/23/03